

## YOU &amp; MATHS

Find the equation of the line through  $(2, 4)$  with slope 6.*(CAN John Abbott College, Final Exam, 2000)*

The point-slope equation of a line through point  $(a, b)$  and with slope  $m$  is given by

$$y - b = m(x - a).$$

From the problem, we know that the line passes through point  $(2, 4)$  and has  $m = 6$ . Therefore, if we substitute these numbers into the previous equation, we get:

$$y - 4 = 6(x - 2).$$

The equation of the line in slope-intercept form is then:

$$y - 4 = 6x - 12 \rightarrow y = 6x - 12 + 4 \rightarrow y = 6x - 8.$$

We can write the same equation in general form as follows:

$$6x - y - 8 = 0.$$